

LISTING OF THE CLAIMS:

1. (Previously Presented) A vertebral arthrodesis device comprising:

at least one pin designed to be positioned along vertebrae that are to be immobilized;

at least one screw for anchoring the pin to the vertebrae, each screw including: a head that delimits a cavity for receiving the pin;

at least one ring for snap-on installation of the pin in the cavity that the head delimits, the ring having a substantially spherical outer surface and an inside diameter allowing sliding engagement on the pin;

wherein the head of each screw is shaped so that the cavity that the head delimits may receive the at least one ring with snap-on installation; and

wherein the cavity of each screw head includes an inner surface having a partially spherical contour bordered on either side by a lateral recess, wherein the lateral recesses and the partially spherical contour allow angular adjustments in multiple planes of the at least one pin with respect to the at least one screw prior to immobilization of the pin.

2. (Previously Presented) The device according to claim 1, wherein the head of each screw comprises at least one slot opening in the bottom of the cavity, giving the cavity a slight flexibility in a direction perpendicular to that according to which the cavity opens on the outside of the head.

3. (Previously Presented) The device according to claim 2, wherein the head of each screw comprises two lateral slot openings in the bottom of the cavity.

4. (Previously Presented) The device according to claim 3, wherein each lateral slot opening is inclined toward the other slot opening.

5. (Previously Presented) The device according to claim 1, wherein the partially spherical contour of the inner surface of each cavity has a diameter slightly less than the outer diameter of each ring, respectively.

6. (Previously Presented) The device of claim 1, wherein the recesses are each in the form of a segment of a hollow sphere.

7. (Previously Presented) The device according to claim 1, wherein the head of each screw includes two lateral walls, each lateral wall including at least one threaded hole.

8. (Previously Presented) The device of claim 1, wherein the at least one ring includes a plurality of slots distributed on its periphery.

9. (Previously Presented) The device of claim 8, wherein the slots of the at least one ring extend between the outer surface of the ring and the inside diameter of the ring.

10. (Previously Presented) The device of claim 9, wherein each of the slots of the at least one ring open at one of the longitudinal openings, and each adjacent slot opens at the opposite longitudinal opening.

11. (Previously Presented) The device of claim 1, wherein the head further includes:

at least two lateral threaded holes;

a cap shaped for positioning on the head by overlapping the at least one ring and having at least two threaded holes configured to align with the at least two lateral threaded holes of the head when the cap is positioned on the head; and

at least two threaded tightening members for securing the cap to the head by passing the tightening members through the at least two holes of the cap and into the threaded holes of the head.

12. (Previously Presented) A vertebral arthrodesis device, comprising:

at least one pin configured to be positioned along two or more vertebrae;

at least one ring having a through hole for receiving the at least one pin, an inside diameter configured to allow sliding engagement with the at least one pin, and an outer surface having a substantially spherical shape; and

at least one screw, including:

a head that includes a cavity for receiving the at least one ring in sliding engagement with the pin with snap-on installation, wherein the cavity includes an inner surface having a partially spherical contour configured to cooperate with the outer surface of the at least one ring to permit angular adjustment of the at least one pin; and

at least one cap having an aperture configured to contact and secure the at least one ring within the cavity, the at least one cap being configured to provide angular clearance to the at least one pin in multiple planes.

13. (Previously Presented) The device according to claim 12, wherein the head of each screw comprises at least one slot opening in the bottom of the cavity, giving the cavity a slight flexibility in a direction perpendicular to that according to which the cavity opens on the outside of the head.

14. (Previously Presented) The device according to claim 13, wherein the head of each screw comprises two lateral slot openings in the bottom of the cavity.

15. (Previously Presented) The device according to claim 14, wherein each lateral slot opening of the head of the screw is inclined towards the other slot opening.

16. (Previously Presented) The device according to claim 12, wherein the inner surface of the cavity of each screw is in the form of a hollow sphere segment having a diameter slightly less than an outer diameter of each ring.

17. (Previously Presented) The device according to claim 12, wherein the cavity of each screw includes two spherical recesses configured to provide angular clearance of the at least one pin in multiple planes.

18. (Previously Presented) The device according to claim 12, wherein the head of each screw includes two lateral walls, each lateral wall including at least one threaded hole.

19. (Previously Presented) The device of claim 12, wherein the at least one ring includes a plurality of slots distributed on its periphery.

20. (Previously Presented) The device of claim 19, wherein the slots of the at least one ring extend between the outer surface of the ring and the inside diameter of the ring.

21. (Previously Presented) The device of claim 20, wherein each of the slots of the at least one ring open at one of the longitudinal openings, and each adjacent slot opens at the opposite longitudinal opening.

22. (Previously Presented) The device of claim 12, wherein the cap includes at least two threaded holes; and

wherein the head further includes:

at least two lateral threaded holes configured to align with the at least two lateral threaded holes of the cap when the cap is positioned on the head; and

at least two threaded tightening members for securing the cap to the head by passing the tightening members through the at least two holes of the cap and into the threaded holes of the head.

23. (Canceled).

24. (Previously Presented) The device of claim 12, wherein the aperture has a conical shape.

25 - 35. (Canceled).

36. (Previously Presented) The device of claim 1, wherein the head of the screw further includes a cap shaped for positioning on the head by overlapping the at least one ring, the cap including first and second lateral recesses to allow angular adjustments in multiple planes of the at least one pin with respect to the at least one screw prior to immobilization of the pin.

37. (Previously Presented) The device of claim 12, wherein the cavity of each screw is configured to provide angular clearance to the at least one pin in multiple planes.

38. (Previously Presented) The device of claim 17, wherein the two lateral spherical recesses border the partially spherically contoured inner surface of the cavity of the at least one screw.

39. (Previously Presented) The device of claim 12, wherein the at least one cap includes two lateral spherical recesses configured to provide angular clearance of the at least one pin in multiple planes.

40. (Previously Presented) The device of claim 12, wherein the aperture of at least one cap is delimited by inwardly inclined side walls in a cross-section along a first axis of the cap.